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Evaluating choroidal thickness in diabetic retinopathy

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Dear editor

We read with interest the article by Unsal et al¹ and congratulate them on their work assessing choroidal thickness in patients with diabetic retinopathy. We will like to highlight some factors of relevance.

Unsal et al state that their measurement of the choroid was from the outer part of the retinal pigment epithelial layer to the choroidal scleral junction.¹ However, their Figure 2 seems to draw the upper border of the choroid at various locations (external limiting membrane, inner/outer segment junction, top of the retinal pigment epithelium).¹ An illustrative diagram (Figure 1) for measuring choroidal thickness can be seen in the study reported by Copete et al.² Recent studies of the thickness of the retinal pigment epithelium–Bruch’s membrane complex in normal individuals ranged from 17.5 μm to 28.2 μm .³ Hence, measurement of choroidal thickness has to be drawn correctly and consistently at the same location (outer part of the retinal pigment epithelium) to minimize potential inaccuracies.

It is also important to consider the effects of diurnal variation in choroid thickness on their reported results. Previous studies have concluded that the choroid is found to be thickest at night (11 pm) and thinnest at noon (12 pm).⁴ The difference between the thickest and thinnest choroidal thickness due to diurnal variation can be up to 67 μm .⁵ Hence, the study could have standardized the timings of the optical coherence tomography scans for both controls and diabetic subjects to minimize any potential differences in choroidal thickness caused by diurnal variation.

The results reported by Unsal et al are consistent with those of other studies showing no significant change in choroidal thickness in subjects with nonproliferative diabetic retinopathy and decreased choroidal thickness in subjects with proliferative diabetic retinopathy or diabetic macular edema.^{6,7} In addition, a recent study by Adhi et al characterized the morphological features of the choroid, ie, the Haller, Sattler, and choriocapillary layers. Their results showed significant thinning of the combined thickness of the Sattler and choriocapillary layers in eyes with proliferative diabetic retinopathy or diabetic macular edema when compared with controls.⁷ It will be interesting to note if similar results were seen in the Unsal et al study too, since both studies used spectral domain optical coherence tomography.

In conclusion, Unsal et al has provided very useful information on choroidal thickness in diabetics. However, measurements of choroid thickness have to be correctly drawn and consideration of diurnal variation is required to improve the accuracy of the results.

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Disclosure

All authors contributed to, wrote, or edited this letter. The authors have no proprietary or financial interests in its contents.

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